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Regional Asthma Management and Prevention

Rose Foundation for Communities & the Environment

Sierra Club California

Union of Concerned Scientist

Urban and Environmental Policy Institute, Occidental College

West Oakland Environmental Indicators Project

Via E-mail and Overnight Mail

February 25, 2009

James N. Goldstene, Executive Officer
Robert Fletcher, Chief Stationary Source Division
California Air Resources Board
1001 I Street
Sacramento, California 95812

Re: Comments on Draft Report "Technical Options to Achieve Additional Emissions and Risk Reductions from California Locomotives and Railyards"

Dear Messrs. Goldstene and Fletcher:

The undersigned provide comments on the California Air Resources Board's ("**CARB's**") Draft Report "Technical Options to Achieve Additional Emissions and Risk

Reductions from California Locomotives and Railyards" and dated December 2008 ("**Report**"). The Report analyzes 37 options to achieve emission reductions from California locomotives and at the State's railyards.

We understand from Mr. Goldstene's January 20, 2009 letter that staff will present the Report to the Board before June 30, 2009 along with a formal Plan for California locomotives and railyard sources. The goal of the effort is "to reduce health risk by achieving maximum possible reductions in public exposure to air toxics." We share this goal and, as set forth below, therefore respectfully urge CARB to exercise its authority to implement a Plan designed to reduce human health risk. CARB should adopt rules and regulations for all cost-effective and feasible measures studied in the Report, including site-specific operational measures.

I. CARB Has Authority and a Duty to Regulate California Locomotive and Railyard Sources

The Federal Clean Air Act ("**CAA**") in sections 110(a), 112(1), 172(c) and 182(b) delegates regulatory responsibility to CARB for criteria pollutant and air toxic control measures. Pursuant to the CAA, the State Implementation Plan[1] ("**SIP**") must demonstrate attainment or include all feasible measures. CAA section 209(e) also gives California authority to regulate certain non-road engines and to adopt "in-use" operational requirements. Pursuant to this delegation, the Cal. Health & Saf. Code sections 36902, 40462, 40469 and 43018 confirm that CARB has authority to take "whatever" actions are "necessary, cost-effective and technologically feasible" to achieve the maximum degree of reduction possible from mobile sources. Further, CARB has an express duty pursuant to Cal. Health & Saf. Code sections 40702 and 43013 to regulate through rulemaking locomotive and railyard sources.

II. Measures to Reduce Health Risk and Emissions are Necessary

There can be no dispute that measures to reduce particulate matter-10 and 2.5 ("**PM**"), diesel PM and criteria pollutants from locomotives and California railyards are necessary. Mr. Goldstene's January 20, 2009 letter confirms that "railyards are responsible for an unacceptably high risk of exposure to diesel particulate matter in nearby communities."

The 2007 State SIP strategy for PM-10 attainment concedes that the severity of the region's PM problem and the attainment deadline "make it necessary to further mitigate locomotive emissions in 2014." As a result of the 2009 California Budget revisions to CARB's Off-Road Diesel Regulation, the need for these reductions becomes even greater because of the State needs to make up the reductions that were taken away through the Budget process. Moreover, locomotive emissions reductions will be necessary as California embarks on developing its plans to meet the 35 $\mu g/m^3$

[1] SIP measures generally are intended to achieve National Ambient Air Quality Standards for criteria air pollutants, PM-10 and PM-2.5 are both criteria pollutants responsible for much of the toxic risk created by locomotive and railyard emissions in the State. Thus, a SIP measure that reduces PM from railyard sources will also reduce toxic risk.

24-hour PM 2.5 standard. This need for additional emissions reductions is not solely confined to attaining the relevant PM standards, but also needed to attain the ozone standard. This is particularly true given the South Coast's reliance on unknown "black box" measures to demonstrate ozone attainment pursuant to CAA section 185. In this circumstance, the State and the South Coast Air Basin need every available measure, including many of the options identified in your Report.

CARB's 2007 and 2008 risk assessment for California railyards shows significant air toxic risks. For example, CARB's health risk assessment for residential cancer risks adjacent to the San Bernardino BNSF Railway Co. railyard showed cancer risk as high as 3300 in one million. We believe that total cumulative risk from all regional sources is far greater and non-cancer risks are estimated by the South Coast AQMD to be at least ten times higher.

These localized, environmental justice impacts will not be significantly mitigated by an effort or SIP commitment focused on line-haul locomotives (option no. 9) alone. It is for this reason that we insist that CARB also focus this Report and its upcoming Plan on risk reduction to protect human health, not merely on emission reductions. This is particularly true given the paucity of future mitigation proposals in the Railroads' own draft Mitigation Plans.[2]

III. The Report Shows that Numerous Measures are Cost-Effective and Feasible

The Report concludes that several measures are cost-effective (PM+NOx) using traditional methodologies. Cost-effectiveness will be buttressed by the fact that, as explained in Mr. Goldstene's January 20, 2009 letter, CARB and the Report "will evaluate cost-effectiveness using both traditional and Carl Moyer methodologies." The Carl Moyer approach, weighted to account for local PM emissions and accompanying health risk, is the appropriate way to gauge the cost-effectiveness of these options. The State must reduce "unacceptably high" risks. We look forward to CARB Board adoption of a Plan driven by health risk reduction for each of the railyard sources and technical options addressed in the Report

The Report shows cost-effectiveness of between $1-5/lb. for various options relating to replacing, remanufacturing or installing aftertreatment on 152 older California switch and 400 older intrastate medium horsepower locomotives identified as option nos. 1-8.[3] The Report estimates that switch locomotives generate half of the railyard

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[2] Unfortunately, the BNSF Railway Co.'s and Union Pacific Railroad's respective Mitigation Plans are woefully inadequate. The Mitigation Plans merely outline activities that are already under way, planned to be implemented, or that have already been implemented at the railyards pursuant to pre-existing rules and regulations. The Plans set forth no specific additional measures that the Railroads are willing to implement to meet the urgent health challenges posed by their operations

[3] The options to clean up switch locomotives should be clarified by grouping options nos. 1 through 3 as one package versus option no. 4, given that options nos. 2 and 3 are a progression of the first option. Also, the options should be evaluated through several different scenarios over time. For example, if Tier 4 engines incorporating DPFs and SCR are available by 2015, and the plan to replace old switchers with ULESLs lasts five years, the newer

locomotive diesel PM emissions and U.S.EPA has stated that such switcher and older engine controls are not-preempted and "are subject to regulation by California." *See* 72 Fed. Reg. 15971 (April 3, 2007).

The Report shows cost-effectiveness of $12-37/lb. for option no. 9 to accelerate introduction on Tier 4 line-haul locomotives. This is a 2007 SIP commitment and is estimated to reduce 16.6 tons per day Statewide of PM and NOx.

The Report further concludes that measures for cargo handling equipment including options nos. 11 and 14 are cost-effective at between $9-41/lb. These include measures for yard trucks that the Report estimates are responsible for up to seventy percent of railyard cargo handling equipment emissions. Further, hood technology set forth in option no. 21 presents an estimated cost-effectiveness of $30/lb.

All these cost-effective and feasible measures that will have an immediate impact on health risks for fenceline communities should be adopted by enforceable regulation as soon as possible.[4]

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tier 4s may be available in the last few years of replacement. We do not suggest that switch locomotive engine replacements should in any way be delayed. However, the early use of Tier 4 engines should be emphasized.

We appreciate the inclusion of option no. 4 covering Tier 0 Plus emission standards for the sake of a thorough review, however, we do not support this option moving forward. The technical review includes convincing arguments against Tier 0 Plus as a control strategy, including the fact that only a fraction of switch locomotives would be subject to these standards and emission reductions would be far less than other options.

The technical review should also address the following issues:

- Costs for a new Tier 3 gen-set ULESL seem over-estimated at $1.5 million each. Given the run down of costs on page 43, the onboard equipment such as GPS and data loggers would have to cost $350,000 to add up to $1.5 million in the highest cost scenario for all other components. Some existing locomotives or portions of them may be able to be reused, providing cost savings unaccounted for here.
- The assumption that engines must be remanufactured every seven to ten years seems questionable given that 62 pre-tier 0 switchers are still operating, apparently not having been remanufactured since 1999 at the latest.
- The emission reductions provided by requiring Tier 4 engines during repowers to ULESLs already retrofitted with DPFs and SCR needs to be clarified. Timely repowers upon the end of engine useful life with the cleanest available new engine is important to preserve emission reductions, yet does not appear to be a separate control strategy in itself.

Options nos. 5 and 6 for medium horsepower locomotives appear to be quite similar with PM emissions being roughly equal and NOx emissions lower by roughly one quarter in option no. 6. We therefore support option no. 6, if the gen-sets are available, yet would expect all 400 medium HP locomotives to be replaced as opposed to the current proposal in option no. 6 to replace just half of the medium HP locomotives. Further, if the exhaust controls of option no. 7, DPFs and SCR, are verified, options no. 5 and no. 6 may show very little difference. The combination of options no. 5 and no. 7 vs. no. 6 and no. 7 should be evaluated. Similar to option no. 4, we do not support option no. 8 to require a remanufacture to Tier 0 Plus standards, as the emission reductions are inferior.

[4] The Railroads' environmental commitments for the proposed BNSF So. Cal. International Gateway ("**SCIG**") and Union Pacific Intermodal Container Transfer Facility ("**ICTF**") expansions include: electric cranes and yard equipment, upgrading entrances and infrastructure, clean truck fleet, minimizing diesel and integrating alternative fuels, soundwalls, urban forest and reduced lighting impacts. The above-listed measures are feasible and can reasonably be implemented by the rail companies for the SCIG and ICTF expansions. These types of measures

IV. CARB's Upcoming Plan and the Final Report Should Focus on Health Risk Reductions and Include Site-Specific Measures

The Report concedes that "[t]here are opportunities to reduce railyard diesel PM emissions and associated health risks to nearby residents through the design and implementation of railyard specific operational and physical changes." The undersigned request that CARB seize these "opportunities" now by providing a more thorough analysis in the Report and by including such measures in its upcoming Plan. The CAA and Cal. Health & Saf. Code authorize, among other things, regulation to control opacity and diesel exhaust from "in-use" operations. *See Engine Mfrs. Ass'n v. U.S.E.P.A.*, 88 F.3d 1075 (D.C. Cir. 1996); Cal. Health & Saf. Code sections 39650 *et seq*. and 41701. Significant reductions in health risks can be achieved through relocation of maintenance facilities, staging areas and yard entrances, or by requiring higher emission controls on equipment near high risk residential areas. Many site-specific measures and "in-use" operational controls will cause little or no interference with interstate rail operations but will help to improve conditions for fenceline residents.

Thus, option nos. 32-37 merit more analysis from CARB than the bare details set forth in the Report. These measures include fenceline mitigations including installation of walls, trees, indoor air filtration and PM monitoring in railyard communities. Yet, the Report contains only cursory analysis of these measures. For example, we believe the conclusion in the Report that "[t]he health benefits of air cleaning devices are not clear" or that "the cost effectiveness in reducing indoor particle levels and health risks over time is unclear" is premature and warrants further analysis.

CARB staff have been present at more than one dozen community meetings recently held throughout the State to discuss the Railroads' draft Mitigation Plans. At these meetings, CARB staff consistently heard testimony from local residents about the local impacts and pollution emissions from specific railyard operations. This testimony and the time spent by all at these Mitigation Plan meetings must not be wasted. CARB should incorporate this testimony, in this Report and its Plan, by considering site-specific "in-use" operational measures including:

A. Re-locate truck entrances of facilities, where high levels of risk from pollution exists, away from sensitive receptors and residential areas.
B. Create health protective buffers between sensitive receptors/ residential areas and the facilities. (1,000-1,500 ft)
C. Provide filtration system to areas of high health risk.
D. Re-locate maintenance and load test areas away from sensitive receptors and residential areas.
E. Re-locate mainline stop areas where locomotives queue and idle near homes and schools.
F. Re-locate fueling stations away from sensitive receptors and residential areas.

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should be implemented (with a reasonable schedule and timetable) at existing yards throughout the State to reduce health impacts from existing facilities and operations.

G. Create no idle zones for locomotives within 50' of sensitive receptors and residential areas.
H. Deploy the use of Advanced Locomotive Emissions Control System in all load test areas.
I. Mitigate existing impacts by creating a fund and program deploying community clinics and Breath Mobiles that could monitor the residents in high risk areas.

V. CARB's Upcoming Plan and the Final Report Should Include Option No. 35 for Monitoring

We believe CARB should institute a monitoring plan (option no. 35) for PM and diesel constituents at the fencelines in communities including but not limited to Commerce, Mira Loma, San Bernardino, West Oakland or Wilmington. In fact, we suggest that such monitoring be a cornerstone of CARB's upcoming Plan. Relying on EMFAC models and estimates is helpful, but alone, is insufficient. Properly collecting data is critical to assessing the effectiveness of control measures and the pollution exposure of residents. We strongly recommend air monitoring with quantifiable baselines and that can measure progress and effectiveness.

VII. CARB Should Implement Option Nos. 28 and 36 For Enhanced Enforcement

Regulatory oversight and enforcement are critical for CARB's Plan to reduce railyard pollution. We therefore strongly recommend implementation of option nos. 28 and 36. CARB's mobile source and heavy duty diesel Enforcement Branch must be aggressive and provided with a secure funding stream for its activities. This is particularly true because the Report relies on compliance with the Port Drayage Truck Regulation with regard to analysis of reductions from truck measures in option nos. 17 to 19 and anti-idling measures set forth in option no. 23. The emission reductions identified in the Report are erroneous if CARB regulations and agreements "in-use" are no longer in effect for various reasons or not stringently enforced by CARB and complied with by industry.

VIII. The Measures in the Report, Including Long-Term Alternative Fuel and Electrification Options, Should be Analyzed for Greenhouse Gas and AB 32 Benefits

CARB's mission to improve air quality *and* reduce global warming emissions is not reflected in the draft Report. The State has a serious challenge of meeting 2050 climate goals and long-term investments in rail infrastructure must consider this. Meeting the 2050 climate goals of an 80 percent reduction in global warming pollution economy wide will require significant improvement in the way we transport goods. CARB should include an evaluation of potential greenhouse gas ("**GHG**") emissions reductions, or increases, from each option studied. In addition, the cost-effectiveness evaluation of the options should include a GHG component. Including this information in the document is critical to evaluating projects in the context of air quality and global warming. For example, the long term electrification and alternative fuel measures as

set forth in option nos. 17-20, 24, 26 and 29-31 may eliminate near source exposure to diesel emissions from this equipment *and* cause a large reduction in global warming pollution.

IX. Conclusion

For all these reasons, the undersigned urge CARB to exercise its authority to adopt rules and regulations at once for all cost-effective and feasible measures to reduce human health risk and PM exposures studied in the Report, including the site-specific operational measures listed above. We look forward to finalizing the Report and the Plan to be presented for Board review by June 30, 2009. We respectfully urge CARB to exercise its authority to implement a Plan designed to reduce human health risk. Thank you for your consideration of this letter. Should you have any questions or need more information, please contact Angelo Logan at 323-263-2113.

Sincerely,

Breathe California
Andy Katz

Center for Community Action and Environmental Justice
Penny Newman

Coalition for Clean Air
Tim Carmichael

Communities for a Better Environment
Bahram Fazeli

Communities for Clean Ports/EndOil
Ryan Wiggins

East Yard Communities for Environmental Justice
Angelo Logan

Environment Now
Mara Elana Burstein

Just Transition Alliance
Jose T. Bravo

National Resources Defense Council
Diane Bailey and Adrian Martinez

Pacific Institute
Swati Prakash

Pacoima Beautiful
Patricia Ochoa

Physicians for Social Responsibility - Los Angeles
Martha Dina Argüello

Regional Asthma Management and Prevention
Joel Ervice

Rose Foundation for Communities & the Environment
Jill Ratner

Sierra Club California
Bill Magavern

Union of Concerned Scientists
Don Anair

Urban and Environmental Policy Institute, Occidental College
Martha Matsuoka

West Oakland Environmental Indicators Project
Brian Beveridge

Cc: Chairman, Mary D. Nichols